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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,886	11/26/2003	Takahiro Naito	Q78645	5995

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EXAMINER

ELCENKO, ERIC J

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/721,886

Applicant(s)

NAITO, TAKAHIRO

Examiner

Eric Elcenko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Bachl et al. (U.S. Pub. No. 2002/0191578)

In regard to Claims 1, 4 and 7, Bachl teaches providing an improved mechanism for increasing the quality of channel estimation for CDMA-systems, especially for systems following the 3GPP standard, by simultaneously ensuring a low complexity. According to the invention, a method and a receiver for reception of signals encoded according to the 3GPP wideband CDMA standard is proposed both of which using coded control symbols (TFCI) as additional pilot symbols (Pilot). (Abs) To facilitate channel estimation, pilot blocks, i.e. blocks of data symbols known a priori by the receiver, may be transmitted within a link in regular intervals in a specific control channel, such as for example in uplink direction with the data stream going from a mobile station to a base station of a mobile communication systems following the 3GPP standard. (Para 5)

Advantageously, the coded control symbols comprise data from the transport

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format combination indicator (TFCl) of the dedicated physical control channel (DPCCH), since there is a unique mapping from a TFCl to the associated TFCl bits. The TFCl can be re-encoded at the receiver site to obtain the transmitted TFCl bits to be used as an additional pilot symbol for the channel estimation for the DPDCH. the invention has means for re-encoding decoded control symbols and using said re-encoding control symbols as additional pilot symbols said means comprising a TFCl encoder. Further it is suggested that said means for re-encoding decoded control symbols are associated with a channel estimation unit. Accordingly, it is further proposed that the TFCl bits are decoded at the end of each DPCCH frame and the most likely transmitted TFCl is determined and re-encoded for using as additional pilot symbols. (Para 20-22) If the TFCl code-word, however, is decoded correctly, the embedded TFCl information is known and the DPDCH state of this frame can be determined correctly. In this case better channel estimates for the DPDCH will lead to lower BERs (Bit Error Rate). Since there is a unique mapping from a TFCl to the associated TFCl bits, the TFCl can be re-encoded at the receiver site to obtain the transmitted TFCl bits in this frame. As a consequence, each TFCl bit can now be used as an additional pilot symbol for the channel estimation for the DPDCH. (Para 47)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2-3, 5-6 and 8-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Bachl et al. (U.S. Pub. No. 2002/0191578) in view of Ohno et al. (U.S. Pub. No. 2005/0157759)

Bachl does not disclose using Hadamard transforms used in decoding the TFCI value.

Ohno discloses A TFCI decoding processor 61a in the TFCI discriminator 61 decodes the TFCI Code Word, which was received at the same time as the multiplexed data, on a per-frame basis as by Hadamard transform processing. A TFCI error-detecting correction unit 61b compares the decoded TFCI with the decoded TFCIs of all frames in the maximum TTI, decides that this decoded TFCI is the TFCI of all frames if it agrees with the TFCIs, and decides that the most numerous decoded TFCI is the TFCI of all frames by majority rule if the decoded TFCI is different.

It would have been obvious to one of ordinary skill in the art to modify Bachl to include the teachings of Ohno in order to help reduce the number of bit errors in the TFCI and create a more reliable signal to be used in synchronization.

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In regard to Claims 3, 6 and 9, the combination discloses TFCI bits used in the pilot signals for synchronization in channel estimation. Ohno contains a TFCI decision unit which is connected to controller 21,62 which is connected to a DPCCH creation unit which uses the TFCI bits.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pub. No. 2002/0016179 to Baker et al.

U.S. Pat. No. 7,159,155 to Obuchi et al.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Elcenko whose telephone number is (571) 272-8066. The examiner can normally be reached on M-F 7:30 AM through 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ee



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